

ABSTRACT

A method for assembling a power semiconductor module with reduced partial discharge behavior is described. The method includes steps of bonding an insulating substrate onto a bottom plate; disposing a first conductive layer on a portion of said insulating substrate, so that at least one peripheral top region of said insulating substrate remains uncovered by the first conductive layer; bonding a semiconductor chip onto said first conductive layer; disposing a precursor of a first insulating material in a first corner formed by the first conductive layer and the peripheral region of the insulating substrate; polymerizing the precursor of the first insulating material to form the first insulating material ; and covering the semiconductor chip, said substrate, the first conductive layer, and the first insulating material at least partially with a second insulating material. The precursor of the first insulating material can be a low viscosity monomer or oligomer, preferably a polyimide. Also disclosed is a semiconductor module with reduced partial discharge behavior.